



In the Specification

Please replace the paragraph beginning on line 4 of page 3 with the following:

The present invention generally uses conventional composite tape, fabric and/or metal details for structural skins, spar and bulkhead webs, fittings et cetera. Conventional laminates are used where high in plane properties are desired. Many different material combinations are possible such as RTM details, thermoplastic details, fiberglass, BMI, etc. The most cost effective process of fabricating the details can be used, in example, a tape laid, platten press cured, waterjet trimmed spar web. The finished details are located with uncured, resin infused 3-D woven connectors (preforms) and adhesive in between the parts in a simple assembly jig or with self locating tooling features (tooling tabs or pins, etc.) Simple compliant overpresses are then placed over the weaves. The assembly is then vacuum bagged and cured, typically with heat and/or pressure, or E-beam processed to avoid thermal effects. It is also possible to assemble structures with room temperature cure systems (wet layup).

Please replace the paragraph beginning on line 18 of page 3 with the following:

The use of these advanced 3-D woven connectors combined with the co-bond process produces low cost, robust, composite structural joints not obtainable with other prior art. Simple, inexpensive, compliant overpresses can be used since the uncured 3-D textile connector forms against the cured detail parts during processing. This method avoids the precision tools required for co-cure (where all the parts are uncured) or the precise fit up required with secondary bonding (where multiple cured parts are brought together with a thin layer of adhesive in between).

Please replace the paragraph beginning on line 14 of page 8 with the following:

A³

In the most general application, structural assembly 10 is formed by coupling at least one sub-assemblies 12 with an uncured pre-form 14 in a curing process. In one embodiment of the present invention, pre-form 14 is a 3-D woven textile impregnated with an uncured resin. Additionally, an adhesive film 16 can be placed between the sub-assemblies 12 and uncured pre-form 14. The adhesive layer can be incorporated into the resin impregnating the 3-D woven textile. However, self-adhering resin systems typically do not have the same properties.

Please replace the paragraph beginning on line 23 of page 8 with the following:

A⁴

Structural assembly 10 is formed when sub-assemblies 12 and pre-form 14 are cured in place. This creates a robust joint between two pre-cured composites or metallic sub-assemblies 12. By simultaneously co-bonding sub-assemblies 12 to pre-form 14, fiber waviness in sub-assemblies 12, which seriously reduces structural strength, can be avoided. Additionally, the process avoids matching a cured composite structure to a cured sub-assembly, which requires expensive tooling and fine tolerances to achieve uniform bondlines that are critical for structural performance.

Please replace the paragraph beginning on line 16 of page 10 with the following:

A⁵

To add additional strength to assembly 10, overwrap plies 28, as shown in FIGURE 9A can be applied on exterior surfaces of the 3-D woven textile preform 14 and sub-assemblies 12 prior to cure 106.